

ABSTRACT OF THE DISCLOSURE

A camshaft adjusting system for an internal combustion engine has a camshaft adjusting device with a first hydraulic chamber and a second hydraulic chamber, wherein the first and second hydraulic chambers act in opposition to one another. A control valve group working as a 4/4-way valve system has a first connection to the first hydraulic chamber, a second connection to the second hydraulic chamber, a tank connection, and a connection for pressurization. The camshaft adjusting system in a first state of the control valve group, when starting the internal combustion engine, is pressure-relieved relative to the tank connection by simultaneously hydraulically connecting the first and second connections of the camshaft adjusting device so that the camshaft adjusting device moves into a dwell position with a single locking mechanism. The dwell position also provides a safety function in case of system failure.